REMARKS/ARGUMENTS

1.) Claim Rejections – 35 U.S.C. §103(a)

The Examiner has maintained the rejection of claims 10 and 12 as being unpatentable over "Applicant's Admitted Prior Art" (APA) in view of Calvignac, *et al.* (U.S. Patent Publication No. 2002/0191642) and Brady, *et al.* (U.S. Patent No. 5,784,698); claims 13 and 14 as being unpatentable over APA in view of Calvignac and Miyoshi, *et al.* (U.S. Patent Publication No. 2003/0087662); and, claims 15-17 as being unpatentable over APA in view of Miyoshi. The Applicants, again, traverse the rejections of claims 13-17.

In responding to Applicants' arguments submitted in response to the prior office action, the Examiner states, exactly as asserted in the prior office action, that:

> "Miyoshi discloses 'HDR is a communication method whereby a base station performs scheduling for allocating communication resources to communication terminals by time division, and also sets a transmission rate for each communication terminal according to the downlink channel quality'."

As noted in Applicants' prior arguments to distinguish that asserted teaching of Miyoshi, the Applicants believe the Examiner reads too much into the teachings thereof. As those skilled in the art will recognize, setting the transmission rate for each communication terminal according to the downlink channel quality experienced by **each** such terminal does not limit the transmission rate that can be set for **other** terminals; *i.e.*, the transmission rate set for one communication terminal according to HDR does not limit the transmission rate that can be set for another communication terminal. In the present office action, the Examiner attacks that distinction by stating that:

> "Based on the DRC signal transmitted from each communication terminal, the base station sets a transmission rate for each communication terminal, and sends a signal to each communication terminal via a control channel indicating communication resource allocation to each communication terminal (Miyoshi [0006]). This shows that data is sent proportionally to channel quality for each terminal. Therefore, Miyoshi discloses distributing the total number of credits proportionally to radio channel qualities indicated by said user entities." (emphasis added)

Again, the Examiner reads too much into the teachings of Miyoshi. Although Miyoshi describes setting a transmission rate by a base station based on a DRC signal transmitted by different communication terminals, tt does not follow that Miyoshi discloses "distributing [a] total number of credits proportionally to radio channel qualities indicated by said user entities;" to conclude otherwise is to not read the credit mechanism of Applicants' invention in the context of the claim as a whole.

As previously noted by the Applicants, the control methods for regulating the flow of data between first and second transmitting radio network nodes recited in independent claims 13, 15 and 17 are characterized, in part, **by distributing the total number of transmission credits to be granted to the user entities** *proportionally to the radio channel qualities indicated by the user entities.* For each of those claims, the Examiner has previously acknowledged that Applicant's Admitted Prior Art (APA) and Calvignac do not disclose distributing a total number of credits (for transmission of data units) proportionally to radio channel qualities indicated by the user entities. As those skilled in the art will recognize, setting the transmission rate for each communication terminal according to the downlink channel quality experienced by **each** such terminal does not limit the transmission rate that can be set for **other** terminals; *i.e.*, the transmission rate set for **one** communication terminal according to HDR does not limit the transmission rate that can be set for **another** communication terminal. *In contrast*, the control methods recited in claims 13, 15 and 17 are directed to managing the limited capacity of a radio network node (*e.g.*, due to limited buffer resources) which are apportioned *proportionally to radio channel qualities indicated by user entities* to which data units will be transmitted; *i.e.*, **granting more transmission credits to one entity reduces, proportionally, the number that can be granted to another entity**.

In responding to that technical distinction argued by Applicants' in response to the prior office action, the Examiner asserts that "the features upon which the applicant relies . . . are not recited in the rejected claim(s)." The Applicants disagree. Claim 13 concludes with the limitation of: "distributing the **total** number of credits **proportionally** to radio channel qualities indicated by said user entities." (emphasis added). As those skilled in the art will recognize, **if there are a "total" number of credits, and they are**

distributed "proportionally," then granting more transmission credits to one entity will, *necessarily*, reduce the number that can be granted to another entity. The Examiner has not pointed to any such teaching in Miyoshi and, accordingly, claims 13, 15 and 16 are not obvious over Applicant's APA, Calvignac and Miyoshi. Furthermore, whereas claims 14 and 17 are dependent from claims 13 and 16, respectively, and include the limitations thereof, they are also not obvious.

2.) Proposed Amendment

Miyoshi does not teach a transmission credit mechanism wherein "granting more transmission credits to one entity reduces, proportionally, the number that can be granted to another entity," which the Examiner has asserted is not recited in the claims. As argued *supra*, the Applicants believe such restriction is encompassed by the claim language and are prepared to appeal the Examiner's basis of rejection. If the Examiner is inclined to allow the claims if they are amended to explicitly recite that restriction, however, the Applicants would agree to an Examiner's amendment to claims 13, 15 and 16 as follows:

> 13. A control method for regulating the flow of data between a first transmitting radio network node and a second transmitting radio network node in a radio transmission network, comprising the steps of:
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> said second transmitting radio network node receiving data from said first transmitting radio network node to be forwarded to plural user entities via an air interface; wherein:
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> the first transmitting radio network node sends a capacity request to the second transmitting radio network node requesting the second transmitting radio network node for permission to send an indicated number of data units that are pending in the first transmitting radio network node; and,
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> the second transmitting radio network node, in response to the capacity request, sends an allocation frame to the first transmitting radio network node, said allocation frame indicating the number of data units the first transmitting radio network node is given permission to transmit, this latter number being referred to as credits;
>
> wherein the second transmitting radio network node, if buffer resources for storing of data units at the second transmitting radio network node are limited for each data flow between the first and second transmitting radio network nodes, performs the steps of:

counting the instantaneous number of requested data units in each data flow to obtain a total number of requested data units;

computing the total number of credits to be granted in each data flow by subtracting from a target buffer filling level for the total number of data flows the total number of data units currently stored in each of the buffers and the total number of credits previously given but not yet received; and,

distributing the total number of credits proportionally to radio channel qualities indicated by said user entities, wherein granting more transmission credits to one entity reduces, proportionally, the number that can be granted to another entity.

15. A control method for regulating the flow of data between a first transmitting radio network node and a second transmitting radio network node in a radio transmission network, comprising the steps of:

said second transmitting radio network node receiving data from said first transmitting radio network node to be forwarded to plural user entities via an air interface, wherein:

the first transmitting radio network node sends a capacity request to the second transmitting radio network node requesting the second transmitting radio network node for permission to send an indicated number of data units that are pending in the first transmitting radio network node; and,

the second transmitting radio network node, in response to the capacity request, sends an allocation frame to the first transmitting radio network node, said allocation frame indicating the number of data units the first transmitting radio network node is given permission to transmit, this latter number being referred to as credits; and,

distributing the number of credits given by the second transmitting radio network node proportionally to radio channel qualities indicated by said user entities to which the second transmitting radio network node is scheduling radio transmission of data units, wherein granting more transmission credits to one entity reduces, proportionally, the number that can be granted to another entity.

16. A radio network node for regulating the flow of data from a transmitting node, comprising:

a buffering resource;

a capacity allocation device for allocating individual amounts of user data to individual user entities;

a flow control protocol and a scheduler;

wherein the capacity allocation device comprises a counter for keeping a running count of the instantaneous number of outstanding credits, outstanding credits being defined as the number of data units that the allocation device has permitted the transmitting node to send, although

the corresponding number of data units has not yet arrived at the radio network node;

a distribution device adapted to distribute the total number of credits given by the radio network node proportionally to radio channel qualities indicated by said user entities to which the scheduler is scheduling radio transmission of data units, wherein granting more transmission credits to one entity reduces, proportionally, the number that can be granted to another entity.

If the Examiner would like to discuss the proposed claim amendments, please call the undersigned.

CONCLUSION

In view of the foregoing remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicants, therefore, respectfully request that the Examiner withdraw all rejections and issue a Notice of Allowance for claims 13-17.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

/Roger S. Burleigh.Reg#40542/

Roger S. Burleigh
Registration No. 40,542

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Ericsson Inc.
6300 Legacy Drive, M/S EVR 1-C-11
Plano, Texas 75024

(972) 583-5799
roger.burleigh@ericsson.com